

CLAIMS

1. An information record medium comprising:
video information to indicate a main video;
5 sub-video information to indicate a sub-video, the sub-video
at least partially displayable over the main video;
predetermined part coordinate information to designate
coordinates of a predetermined part included in the sub-video, in a
coordinate system defined with respect to the sub-video; and
10 sub-video control information including (i)
coordinates-before-movement information to indicate coordinates of
a sub-frame before a movement in the coordinate system, the
sub-frame being at least an area of the sub-video, and (ii)
coordinates-after-movement information to indicate coordinates of
15 the sub frame after n-th movement (n is natural number equal to or
more than 1) in the coordinate system.
2. The information record medium according to claim 1, wherein
the predetermined part is a button video part, and
20 the predetermined part coordinate information is button
position information to indicate coordinates of the button video part.
3. The information record medium according to claim 2, wherein
the sub-video control information further includes first
25 button status information to indicate in which status a button,
which is indicated by the button video part before the movement of

the sub-frame, is among predetermined kinds of preset button status.

4. The information record medium according to claim 3, wherein
5 the sub-video control information further includes second button status information to indicate in which status a button, which is indicated by the button video part after the n-th movement of the sub-frame, is among the predetermined kinds of preset button status.

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5. The information record medium according to claim 2, wherein
the sub-video control information further includes button command information to define a button command to be executed in a case that the button is operated.

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6. The information record medium according to claim 2, further comprising:

high light information to define how to control a high light display for the button video part.

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7. The information record medium according to claim 6, wherein
the high light information to define how to control the high light display defines which display mode is used to perform the high light display among predetermined kinds of preset display mode,
25 depending on the button status among predetermined kinds of preset button status of a button displayed on the main video.

8. The information record medium according to claim 1, wherein
a sub-video information set comprises the sub-video
information and the predetermined part coordinate information, and
5 the main video information, the sub-video information set
and the sub-video control information are divided into
predetermined packets and multiplexed, and further streamed into
a video stream comprising the divided main video, a sub-video
stream comprising the divided sub-video information set and a
10 control information stream comprising the divided sub-video control
information.

9. An information record apparatus comprising:
a first record device for recording video information to
15 indicate a main video;

a second record device for recording sub-video information to
indicate a sub-video, the sub-video at least partially displayable
over the main video, and predetermined part coordinate information
to designate coordinates of a predetermined part included in the
20 sub-video, in a coordinate system defined with respect to the
sub-video; and

a third record device for recording sub-video control
information including (i) coordinates-before-movement information
to indicate coordinates of a sub-frame before a movement in the
25 coordinate system, the sub-frame being at least an area of the
sub-video, and (ii) coordinates-after-movement information to

indicate coordinates of the sub frame after n-th movement (n is natural number equal to or more than 1) in the coordinate system.

10. An information record method comprising:

5 a first record process of recording video information to indicate a main video;

a second record process of recording sub-video information to indicate a sub-video, the sub-video at least partially displayable over the main video, and predetermined part coordinate information
10 to designate coordinates of a predetermined part included in the sub-video, in a coordinate system defined with respect to the sub-video; and

a third record process of recording sub-video control information including (i) coordinates-before-movement information
15 to indicate coordinates of a sub-frame before a movement in the coordinate system, the sub-frame being at least an area of the sub-video, and (ii) coordinates-after-movement information to indicate coordinates of the sub frame after n-th movement (n is natural number equal to or more than 1) in the coordinate system.

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11. An information reproduction apparatus for reproducing the information record medium according to claim 1, said apparatus comprising:

a reproduction device for reproducing the video information,
25 the sub-video information, the predetermined part coordinate information and the sub-video control information;

a display output device capable of displaying the reproduced sub-video information over the reproduced video information;

a control device for controlling the reproduction device and the display output device to display, before the movement of the sub-frame, the predetermined part within the sub-frame before the movement after the predetermined part is subjected to a predetermined kind of processing on the basis of the reproduced predetermined part coordinate information, while displaying the sub-frame before the movement over the main video on the basis of the coordinates-before-movement information included in the reproduced sub video control information, and to display, after the movement of the sub-frame, the predetermined part within the sub-frame after the movement after the predetermined part is subjected to a predetermined kind of processing on the basis of the reproduced predetermined part coordinate information, while displaying the sub-frame after the movement over the main video on the basis of the coordinates-after-movement information included in the reproduced sub-video control information.

12. The information reproduction apparatus according to claim 11, wherein

the predetermined part is a button video part,

the predetermined part coordinate information is button position information to indicate coordinates of the button video part,

the information record medium further comprises high light information to define how to control a high light display for the

button video part,

the reproduction device further reproduces the high light information, and

the control device controls the reproduction device and the
5 display output device to perform the high light display as the predetermined kind of processing for the button video part, on the basis of the reproduced high light information.

13. An information reproduction method of reproducing the
10 information record medium according to claim 1, implemented with an information reproduction apparatus comprising (i) a reproduction device for reproducing the video information, the sub-video information, the predetermined part coordinate information and the sub-video control information and (ii) a display output device
15 capable of displaying the reproduced sub-video information over the reproduced video information, said method comprising:

a first control process of controlling the reproduction device and the display output device to display, before the movement of the sub-frame, the predetermined part within the sub-frame before the
20 movement after the predetermined part is subjected to a predetermined kind of processing on the basis of the reproduced predetermined part coordinate information, while displaying the sub-frame before the movement over the main video on the basis of the coordinates-before-movement information included in the
25 reproduced sub video control information; and

a second control process of controlling the reproduction

device and the display output device to display, after the movement of the sub-frame, the predetermined part within the sub-frame after the movement after the predetermined part is subjected to a predetermined kind of processing on the basis of the reproduced
 5 predetermined part coordinate information, while displaying the sub-frame after the movement over the main video on the basis of the coordinates-after-movement information included in the reproduced sub-video control information.

- 10 14. An information record reproduction apparatus comprising:
- a first record device for recording video information to indicate a main video;
 - a second record device for recording sub-video information to indicate a sub-video, the sub-video at least partially displayable
 15 over the main video, and predetermined part coordinate information to designate coordinates of a predetermined part included in the sub-video, in a coordinate system defined with respect to the sub-video;
 - a third record device for recording sub-video control
 20 information including (i) coordinates-before-movement information to indicate coordinates of a sub-frame before a movement in the coordinate system, the sub-frame being at least an area of the sub-video, and (ii) coordinates-after-movement information to indicate coordinates of the sub frame after n-th movement (n is
 25 natural number equal to or more than 1) in the coordinate system;
 - a reproduction device for reproducing the video information,

the sub-video information, the predetermined part coordinate information and the sub-video control information;

a display output device capable of displaying the reproduced sub-video information over the reproduced video information; and

5 a control device for controlling the reproduction device and the display output device to display, before the movement of the sub-frame, the predetermined part within the sub-frame before the movement after the predetermined part is subjected to a predetermined kind of processing on the basis of the reproduced
10 predetermined part coordinate information, while displaying the sub-frame before the movement over the main video on the basis of the coordinates-before-movement information included in the reproduced sub video control information, and to display, after the movement of the sub-frame, the predetermined part within the
15 sub-frame after the movement after the predetermined part is subjected to a predetermined kind of processing on the basis of the reproduced predetermined part coordinate information, while displaying the sub-frame after the movement over the main video on the basis of the coordinates-after-movement information included in
20 the reproduced sub-video control information.

15. An information record reproduction method implemented with an information record reproduction apparatus comprising (i) a reproduction device for reproducing the video information, the
25 sub-video information, the predetermined part coordinate information and the sub-video control information and (ii) a display

output device capable of displaying the reproduced sub-video information over the reproduced video information, said method comprising:

5 a first record process of recording video information to indicate a main video;

a second record process of recording sub-video information to indicate a sub-video, the sub-video at least partially displayable over the main video, and predetermined part coordinate information to designate coordinates of a predetermined part included in the
10 sub-video, in a coordinate system defined with respect to the sub-video;

a third record process of recording sub-video control information including (i) coordinates-before-movement information to indicate coordinates of a sub-frame before a movement in the
15 coordinate system, the sub-frame being at least an area of the sub-video, and (ii) coordinates-after-movement information to indicate coordinates of the sub frame after n-th movement (n is natural number equal to or more than 1) in the coordinate system;

a first control process of controlling the reproduction device
20 and the display output device to display, before the movement of the sub-frame, the predetermined part within the sub-frame before the movement after the predetermined part is subjected to a predetermined kind of processing on the basis of the reproduced predetermined part coordinate information, while displaying the
25 sub-frame before the movement over the main video on the basis of the coordinates-before-movement information included in the

reproduced sub video control information; and

5 a second control process of controlling the reproduction device and the display output device to display, after the movement of the sub-frame, the predetermined part within the sub-frame after the movement after the predetermined part is subjected to a predetermined kind of processing on the basis of the reproduced predetermined part coordinate information, while displaying the sub-frame after the movement over the main video on the basis of the coordinates-after-movement information included in the reproduced sub-video control information.

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16. A computer program for a record control to control a computer disposed at the information record apparatus according to claim 9, said program making the computer function as at least a part of the first record device, the second record device and the third record device.

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17. A computer program for a reproduction control to control a computer disposed at the information reproduction apparatus according to claim 11, said program making the computer function as at least a part of the reproduction device, the display output device and the control device.

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18. A computer program for a record reproduction control to control a computer disposed at the information record reproduction apparatus according to claim 14, said program making the computer

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function as at least a part of the first record device, the second record device, the third record device, the reproduction device, the display output device and the control device.

- 5 19. A data structure including a control signal, said structure comprising:

video information to indicate a main video;

sub-video information to indicate a sub-video, the sub-video at least partially displayable over the main video;

- 10 predetermined part coordinate information to designate coordinates of a predetermined part included in the sub-video, in a coordinate system defined with respect to the sub-video; and

- sub-video control information including (i) coordinates-before-movement information to indicate coordinates of
15 a sub-frame before a movement in the coordinate system, the sub-frame being at least an area of the sub-video, and (ii) coordinates-after-movement information to indicate coordinates of the sub frame after n-th movement (n is natural number equal to or more than 1) in the coordinate system.